



# The Bayou Observer

December 16, 2011

## WINTER 2011 EDITION

### Weather Ready Nation Kick-Off Announcement

As you may recall from last season's issue of The Bayou Observer, the National Weather service is gearing up to put a stronger emphasis on decision support. This isn't really a paradigm shift, but more of a renewed effort since the NWS has been involved in decision support for years.

The heavier focus on decision support comes as part of the Weather Ready Nation initiative—which will be formally introduced during an event at our office on January 21, 2012. The event will be combined with an office open house, press conference, and awards ceremony.

Similar to our 2009 open house, this one will also feature both office tours and booths sponsored by several of our partners. Two of the most popular displays from 2009—the travelling buoy from NDBC and the tornado safety trailer—will

be back this year!. Other participating agencies include (but are not limited to) NOAA Fisheries, the US Army Corps of Engineers, FEMA, and Ozone amateur radio club.

The centerpiece of the event will be the introduction of our new emergency response meteorologists and the unveiling of our brand new Deployable Weather Information Center that will be used to provide weather support for any large scale response efforts in the area.

We hope you'll join us and we look forward to seeing you then!

What: Weather Ready Nation kick off and office Open House

When: January 21, 2012; 10am-3pm

Where: 62300 Airport Rd, Slidell 70460

### Extreme Weather 2011 - A Year for the Record Books

In a year when weather disasters continually made the news, it is not surprising that 2011 has set a record for the most billion dollar weather disasters (BWDs) during a single year. BWDs are not entirely uncommon in that they have occurred in almost every year. In fact, since 1980, there has been an average of 4 to 5 BWDs per year, and only 4 years during which there were no BWDs.

In 2011, there have been a staggering twelve individual billion dollar weather disasters. From drought to flooding, and

from blizzards to hurricanes and tornadoes, 2011 saw more than its fair share of high-impact weather.

#### GROUNDHOG DAY BLIZZARD

A large winter storm impacted 16 states as well as a few Canadian provinces. The biggest impacts were felt across the upper Midwest—especially in the Chicago region where up to 2 ft of snow was reported. The storm brought Chicago and its surrounding areas to a virtual standstill. Insured losses due to the storm rose to over \$1

Continued on page 4



#### Inside this issue:

OPEN HOUSE ANNOUNCEMENT	1
EXTREME WEATHER 2011	1
BABY, IT'S COLD OUTSIDE!	2
WINTER WEATHER CLIMATOLOGY AND OUTLOOK	3
LIX IN THE COMMUNITY	5



# The Bayou Observer: Winter 2011 Edition

## Baby, It's Cold Outside - Winter Weather Safety and Preparations

Do you know what the proper precautionary actions are when the National Weather Service issues a freeze warning? What about the difference between a freeze warning and a hard freeze warning? Almost all of us know what to do to stay safe during severe weather or even during hurricanes, but not everyone is familiar with winter weather safety practices.

WFO LIX issues freeze warnings as follows. For areas north and west of the tidal lakes (light blue in the picture at right), freeze warnings are issued for the first two freezes of the season (or late in the season if the freeze is occurring after a warm spell). For the city of New Orleans and the remainder of the Southshore (light green in the picture at right), freeze warnings are issued for every expected freeze. Hard freeze warnings are issued for every expected hard freeze regardless of location. A hard freeze is defined as a freeze during which the temperature is expected to drop to 26 degrees or lower for several hours.

When it comes to freeze preparedness, there are “four P’s” to address: people, pets, plants, and pipes.

Several groups of people are susceptible to cold, but the

most susceptible are the homeless and the elderly. Check on any elderly neighbors, friends, or relatives to ensure they have proper heating (either through central heat or a portable heater). Before using a portable heater, be sure that the manufacturer intended it for indoor use and take care to follow ALL of the manufacturer-suggested safety practices.



Similar to people, our pets are also susceptible to cold. Ideally, your pet can be brought inside on the coldest nights. However, if this is not possible for some reason, be sure to give your pet somewhere warm to sleep and plenty of food/water.

Some plants also require special attention during cold weather. Citrus trees, berry bushes, and other sensitive vegetation should be brought inside or covered to help insulate them from the cold. For hard freezes, it may be necessary to add a heat source for the plants such as a light bulb.

Finally, for hard freezes, external pipes should be wrapped with insulation such as foam or blankets and water should be allowed to drip from all faucets. This will help prevent pipes from breaking or bursting on the coldest nights.

For more information see this [website](#).

### Ever wonder why you're supposed to leave the faucets dripping during a hard freeze?

Unlike most liquids that contract in size as they cool and freeze, water actually expands as it nears its freezing point. Without getting into the minute details, this property is a result of the unique hydrogen bonds that make up individual molecules of water.

Because of the relatively warm climate in which we live along the Gulf coast, many houses are built with exposed pipes. When you leave water to sit in these exposed pipes, it can freeze if the temperature drops low enough (usually into the mid 20s for several hours). If the water freezes and expands beyond the capacity of the pipe, it can cause the pipe to crack or burst, leaving you with a mess (and possibly some very costly repairs) to clean up once the temperature rises above freezing again. An extreme example from Michigan is pictured at right.

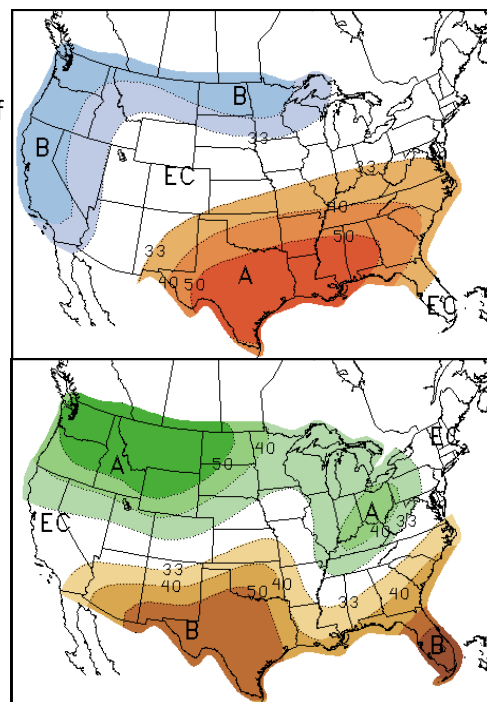
Moving water has less of a tendency to freeze than still water since the turbulence inhibits ice crystal formation. Thus, water that is moving through pipes will not freeze as easily as water that remains still in the pipes.



## Winter Climatology and Outlook

February			
	High	Low	Precip
Norm	62-67	42-47	5.1-5.5
Record	80-85	23-28	13-15

Another hazard that you may not necessarily associate with winter weather is sea fog (or advection fog). Sea fog develops when onshore winds bring higher dew points back into the area between cold fronts. When dew points are high enough, the cold water temperatures can cool the air down to the dew point resulting in dense fog. Sea fog can be extremely dangerous as it can be very dense—reducing visibility to one quarter mile or less for extended periods of time and thereby creating dangerous conditions for both driving and navigating ships. Sea fog can also last well into the daytime hours and sometimes will only clear up for a few hours before setting in again.



Temperature (top) and Precipitation outlooks from CPC for the winter months.  
 "A" is above normal. "B" is below normal.  
 "EC" indicates equal chances.



# The Bayou Observer: Winter 2011 Edition

## Extreme Weather 2011 - A Year for the Record Books, cont.

billion, with total losses over \$1.8 billion. Additionally, the storm was responsible for at least 36 deaths and numerous more injuries. Most injuries were due to the nearly countless traffic accidents.

### APRIL 4/5 TORNADO OUTBREAK

The first of several significant tornado outbreaks impacted 7 states in the Midwest and Southeast during early April. Six of the tornadoes reached EF2 strength with estimated winds of over 110 mph. The outbreak was responsible for 9 fatalities and more than \$2.8 billion in damage.

### APRIL 8-11 TORNADO OUTBREAK

A tornado outbreak impacted the Midwest and Southeast with tornadoes touching down in 8 different states. The strongest tornado was an EF4 that moved through Pocahontas, IA with winds estimated near 170 mph. Several injuries were reported, but miraculously, no one was killed. The tornado outbreak was responsible for more than \$2.2 billion in insured and uninsured losses.

### APRIL 14-16 TORNADO OUTBREAK

One of the largest single-system tornado outbreaks in US history impacted 17 different states. Of the tornadoes, 14 were rated as EF-3s with estimated winds of over 135 mph. The devastating outbreak was responsible for 38 fatalities and more than \$2.1 billion in damage. Most of the fatalities (22) occurred in North Carolina. The deadliest of the tornadoes was an EF-3 that claimed 12 lives. The tornado travelled from Askewville, NC to Harrellsville, NC on an 18.8 mile track.

### APRIL 25-28 TORNADO OUTBREAK

Less than two weeks after the April 14-16 outbreak, the 2011 Super Outbreak became the largest tornado out-

break in US history. The outbreak produced almost 350 tornadoes across 21 different states. An unusually large number of the tornadoes were strong or violent with 11 EF-4s and 5 EF-5s confirmed by the National Weather Service. The outbreak was also responsible for a staggering 322 fatalities and countless additional injuries as well as \$10.2 billion in insured and uninsured losses. The death toll was unusually high due to both the intensity of the tornadoes as well as the fact that several urban areas were impacted by the tornadoes.



Tornado path in Tuscaloosa, AL during the April 25-28 Outbreak. The tornado that produced this damage was rated an EF-4 by the NWS.

### MAY 22-27 TORNADOES

Yet another tornado outbreak impacted the Midwest and Southeast states in late May. The strongest and deadliest of the tornadoes in this outbreak was

an EF-5 tornado that struck Joplin, MO. The long track tornado was responsible for 158 fatalities, making it the single deadliest tornado in US history since modern tornado record-keeping began in 1950. As a whole, the outbreak was responsible for more than \$9.2 billion in insured and uninsured losses.



A picture of the EF-5 tornado that ripped through Joplin, MO on May 22. The tornado was responsible for 160 fatalities and over \$2.8 billion in damage.

### JUNE 18-22 SEVERE WEATHER

A severe weather outbreak impacted the Midwest and Southeast. The outbreak was responsible for multiple reports of wind and hail damage as well as 81 reports of tornadoes. The largest hailstone reported was found just outside of Wallace, KS and was 4.25" in diameter (nearly the size of a softball). The outbreak as a whole was responsible for at least 3 fatalities and over \$1.3 billion in damage.

### SOUTHER PLAINS/SOUTHWEST DROUGHT AND HEATWAVE

Drought and excessive heat created major impacts across much of the southern plains and Southwest. Some of the largest impacts were in Texas and Oklahoma where a majority of ranges and pastures were classified as being in

# The Bayou Observer: Winter 2011 Edition

## Extreme Weather 2011 - A Year for the Record Books, cont.

“very poor” conditions for the 2011 crop growing season. While total estimated damage has already approached \$10 billion, direct and indirect losses will continue to rise as the drought continues.

### MISSISSIPPI RIVER FLOODING

Persistent rainfall over the Ohio Valley combined with melting snow pack in the spring to cause historical flooding along the Mississippi River and its tributaries. Several forecast points along the rivers reached record stages during the flooding, and at least three floodways were utilized to alleviate stress along the levee system. Notably, the Bird’s Point floodway in Missouri was utilized for the first time in its history and the Morganza floodway in Louisiana was opened for only the second time in its history. Total economic loss due to the flooding is estimated in the \$3-4 billion range.

### UPPER MIDWEST FLOODING

Above-normal snow pack across the Northern Rocky mountains melted in the late spring/early summer and combined with higher than normal rainfall to produce flooding across the upper Midwest—mainly along the Missouri and Souris Rivers. In Minot, ND, an estimated 11,000 people were forced to evacuate as the floodwaters rose. Estimated losses due to the flooding topped \$2 billion.

### HURRICANE IRENE

Hurricane Irene made its first US landfall in eastern North Carolina as a category 1 storm. It then pro-



Pictures of Lake Travis show the effects of the historical drought. The sandy areas on both sides of the lake are usually under water.



Flooding in Minot, ND along the Souris River.



Hurricane Irene just before landfall in North Carolina

ceeded to move north/northeastward along the US east coast and made its second US landfall near New York City. The storm caused both storm surge flooding and wind damage along the coast as well as extensive inland flooding due to torrential rains across the Northeast. The storm was responsible for at least 45 deaths and estimated losses of at least \$7.3 billion.

### WILD FIRES

The extreme drought across the Southwest US set the stage for a series of historic wildfires across Texas, New Mexico, and Arizona. The largest fires in Arizona and New Mexico history were recorded this year. In Arizona, the Wallow fire consumed more than 500,000 acres; and in New Mexico, the Las Canchas Fire scorched more than 150,000 acres and threatened the Los Alamos National Laboratory. In all, wildfires in Texas burned more than 3 million acres of land. Total damage in Texas alone is estimated at over \$750 million, and for the three states combined, the total rises to over \$1 billion.

### SUMMARY

2011 was a sobering reminder that extreme weather can have devastating impacts on communities across the country. The events highlighted here are only one of the many reasons that the National Weather Service has redoubled its efforts to create a Weather Ready Nation.

For more information on this year’s extreme weather, see [here](#).



# The Bayou Observer: Winter 2011 Edition

National Weather Service New Orleans/Baton Rouge...  
Where Science Impacts Decisions and Decisions Save Lives



## LIX in the Community

The fall months are full of outreach events for the National Weather Service. Between school talks, office tours, skywarn storm spotter training, and other activities, our calendar was full!

In October, one of the biggest events we attended was Ocean Commotion. The annual event is held at LSU and features hands on activities that teach students about the environment. Employees from WFO LIX and the co-located Lower Mississippi River Forecast Center were on hand with a hydrologic model to teach the students about flooding (see picture top right). We also brought the ever-popular hurricane toss game which is always a hit!

In November, a special group of students from Pearl River High School came to tour the office. The office tour was part of their unit on weather. The students and their parents learned about a typical day at the National Weather Service and discussed weather safety with some of the forecasters. At the end of the tour, the students helped release a weather balloon (see picture bottom right).

Our next big event will be the Open House which will be held on Saturday, January 21, 2012 from 10am until 3pm. Be sure to check out the article on page one for details. We hope to see you then!



## Contact Information

National Weather Service  
New Orleans/Baton Rouge Forecast Office  
62300 Airport Rd.  
Slidell, LA 70460

Phone: 504-522-7330  
985-649-0357

Email: [SR-LIX.Webmaster@noaa.gov](mailto:SR-LIX.Webmaster@noaa.gov)

## A Note From the Editor...

It's hard to believe that 2011 is almost over. From severe weather, to spring flooding, to Tropical Storm Lee, 2011 has been quite a ride for our forecast area.

2012 is shaping up to be an exciting year for our office with several improvements expected for the decision support services we provide. We're looking forward to helping keep you safe and informed next year and for years to come.

On behalf of myself and the rest of WFO LIX, I extend our warmest wishes to you and your family for a happy and safe holiday season.

*Danielle Manning*  
Editor, *The Bayou Observer*